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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,706	03/27/2001	Miklos Gyorgy	L 11226	9909

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EXAMINER

RAMSEY, KENNETH J

ART UNIT PAPER NUMBER

2879

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,706

Applicant(s)

GYORGY ET AL.

Examiner

Kenneth J. Ramsey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf (5,636,800) in view of Cogar (5,106,598) with or without Potts (6,059,206). Wolf discloses a method of recycling the components of a fluorescent lamp including passing a lamp between press rollers 11 to form glass fragments and end pieces which are generally of a larger size. The end pieces 21 are separated from the glass fragments 20 by use of the metal adherent to the end portions (see column 3, lines 43-47). Powdered glass, fluorescent powder and mercury residue are then separated from the glass fragments 20 by an air/shaker system (column 4, lines 30-33), i.e. sieving. As to claim 9, Wolf is deficient in that the means to separate the metal containing material from the remaining material is not disclosed to be magnetic and the glass fragments are not washed to remove the phosphor by a sedimentary process. As to claim 1, Wolf is deficient in that it is not taught to separate the phosphor from the glass fragments 20 by heat treating the fragments to remove a binder and thereafter to wash the glass fragments and separate phosphor from the suspension by at least one sedimentary process. Cogar is cited for teaching a process of recovering phosphor from a reusable waste comprising the glass fragments of a fluorescent lamp comprising washing the glass fragments and subjecting the wash water to at least one sedimentary deposition.

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Forbes, column 2, lines 44-55, and column 3 discloses a process of recovering phosphor material by heat treating the phosphor solids in a range of 450 °C to 550 ° C to remove a binder such as polyvinyl alcohol and thereafter employing a sedimentary process wherein the phosphor is separated from the soluble contamination by decantation. Forbes further teaches that the thermal decomposition step can be enhanced if the phosphor solids are first washed in water to partially dissolve the polyvinyl alcohol and thereafter physically separate the phosphor from extraneous contamination such as glass chips by a sieving or a sedimentary process. Potts is cited for disclosing a sieving process and for further teaching at column 7, lines 31-38, that the end pieces can be also separated from the reusable waste by sieving. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to (1) separate magnetic material such as the end pieces which contain steel from the remaining portion by means of a magnetic separator since the magnetic property differentiates the two components and (2) further separate other waste by sieving as in Potts, column 7, lines 31-38 since the uniformity of the remaining portion facilitates the further treatment, (3) to wash the glass fragments as in Cogar, column 4, line 68 through column 6, line 14 or Forbes, column 2, lines 55-67 to remove the glass contamination and (4) to recover the phosphor from the suspension by a sedimentary process as in Forbes, column 4, lines 28-55 to remove the hazardous contaminants, mercury and cadmium. As to claim 1, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to (1) separate the phosphor coated glass fragments of a fluorescent lamp from the remaining portion by sieving as in Potts, column 7, lines 31-38, (2) heat treat

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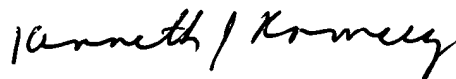
the phosphor coated glass fragments to remove a binder as in Forbes, column 4, lines 27-36, (3) to wash the glass fragments as in Cogar, column 4, line 68 through column 6, line 14 or Forbes, column 2, lines 55-67 to remove the glass contamination and (4) to recover the phosphor from the suspension by a sedimentary process as in by Forbes, column 4, lines 28-55 to remove the hazardous contaminants, mercury and cadmium. Note that while the steps of washing to remove glass fragments and heat treating to remove a binder as disclosed by Forbes have been reversed above, one of ordinary skill in the art would have recognized that the two steps can be optionally reversed since the removal of a binder would obviously facilitate the separation of the phosphor from the glass, just as removal of the glass facilitates removal of a binder from the phosphor. The selected option partly depends upon the characteristics or state of the binder, e.g. whether it is easier to first remove the binder by a heat treatment or to first remove the glass fragments by washing. Also, even though Forbes column 4, lines 36 to 40 suggests that after heat treating, the glass fragments can be separated from the phosphor by merely sieving, those of ordinary skill in the art would have recognized that this later separation step can be facilitated by washing in combination with sieving or decantation while at the same time providing a suspension of the phosphor for a sedimentary treatment as Forbes, column 4, lines 28-35 to remove the hazardous elements and obtain a usable phosphor. Regarding claim 8, note that the washing agent is water in both Forbes and Cogar. As to claim 2, since Wolf desires not to crush the glass contained in the end pieces, it would have been obvious for one of ordinary skill in the art to select a roller separation within the range of 0.6D to 0.9D. As to claim

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3, the crusher rollers of Wolf are adjustable. As to claim 5, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to select the temperature of the heat treatment best suited to the specific application. As to claim 6, ultrasonic washing of coatings from glass vessels of vacuum tubes is well known and obvious since ultrasound provides a strong agitation known to loosen adhered particles. Therefore, it would have been obvious for one of ordinary skill in the art to employ ultrasound during the washing step of Wolf as modified herein. As to claim 7, it is well known to change wash water during the cleaning of parts. Also, Forbes column 3, lines 55-65 teaches changing of the wash water after settling of the phosphor from the suspension. Therefore, the repeated filling up and drawing off of the wash water as in claim 7 would have been obvious to one of ordinary skill in the art at the time of applicants' invention.

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Of the references Lee is of interest for disclosing the use of ultrasonic action to quickly remove "coatings" from CRT components including face panels

Any inquiry concerning this communication should be directed to Kenneth J. Ramsey at telephone number 703-308-2324.



Kenneth J. Ramsey
Primary Examiner
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